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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,642	10/10/2001	Mark S. Crowder	3123-380	8359

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SHERIDAN ROSS PC  
1560 BROADWAY  
SUITE 1200  
DENVER, CO 80202

EXAMINER
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KIM, PAUL D

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/975,642	<b>Applicant(s)</b> CROWDER ET AL.	
	<b>Examiner</b> Paul D Kim	<b>Art Unit</b> 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 October 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-44 and 46-65 is/are pending in the application.  
4a) Of the above claim(s) 32-42 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 65 is/are allowed.
- 6) ☒ Claim(s) 1-8, 11, 29-31, 47, 48, 51, 53-57 and 61-63 is/are rejected.
- 7) ☒ Claim(s) 9, 10, 12-28, 43-46, 49, 50, 52, 58-60 and 64 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/1/04</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

This office action is a response to the amendment filed on 10/1/2004.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-6, 8, 11, 29-31, 51, 54-57 and 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh (US PAT. 4,716,483) in view of Chang et al. (US PAT. 5,271,802).

Walsh teaches a process of rework of the disk drive comprising a step of removing head elements (such as arm stack, transducer heads and wires) from the disk drive for reworking (as per **claims 11 and 51**) such as head cleaning, repair, replacement, testing, alignment as disclosed in col. 2, line 65 to col. 3, line 4. Even though Walsh does not teach a process of opening and removing the head element from the housing of the disk drive, it would be obvious to modify the process of reworking of Walsh including a process of opening and removing the head element from the housing of the disk drive in order to remove and reworking the head element.

However, Walsh does not teach a process of applying a non-permanent protective coating (or temporary protective coating as per claim 51) to the head element. Chang et al. teach a process of applying a protective coating to a magnetic

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head to protect the head element from the wear and corrosion damages during the fabrication process (equivalent with the reworking process) and then remove the protecting coating after completion of etching process (see also col. 1, lines 32-35 and col. 5, line 31 to col. 6, line 52). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of reworking a head element of Walsh by applying a non-permanent protective coating to the head element as taught by Chang et al. in order to protect the head element from the damage during the reworking process.

As per **claims 3-6 and 54-56** Chang et al. also teach a coating process to apply the protective coating by suitable technique such as sputtering or DC magnetron or RF magnetron sputtering in order to provide characteristics of the protective coating such as density hardness and optical density (col. 5, lines 40-51). Even though Chang et al. do not disclose the other techniques recited in claims 3-6, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to apply the protective coating by the techniques as recited in the claimed invention because Applicant has not disclosed that the techniques as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Chang et al. because the protective coating by the techniques as recited in the claimed invention would perform equally well. Therefore, it would have been an obvious matter of design choice to modify the

protective coating by the sputtering technique of Chang et al. to obtain the invention as specified in claims 3-6.

As per **claims 8, 30, 31, 57, 62 and 63** Chang et al. also disclose that a thickness of the protective coating is about 250 angstroms.

As per **claims 29 and 61** Chang et al. also disclose that the protective coating is at least one monolayer (col. 4, lines 61-68).

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh in view of Chang et al., and further in view of Chen et al. (US PAT. 6,532,134).

Walsh, modified by Chang et al., teaches all of the limitations except cleaning the head element prior to apply the non-permanent protective coating. Chen et al. teach processes of applying a protective coating to a slider (equivalent with the transducer head) to protect the slider and cleaning the head element prior to apply the protective coating in order to increase storage medium/transducer interface reliability (col. 5, lines 41-54). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of reworking a head element of Walsh, modified by Chang et al., by cleaning process as taught by Chen et al. in order to increase storage medium/transducer interface reliability.

4. Claims 7 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh in view of Chang et al., and further in view of Sasaki (JP 5649530 A).

Walsh, modified by Chang et al., teaches all of the limitations as set forth above except fluorocarbon polymer as the protective coating. Sasaki discloses protective coating for an electrical device (semiconductor device) comprises a fluorocarbon

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polymer in order to improve corrosion resistance, heat resistance and water repellency (see abstract). Therefore, it would also have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a protective coating of Walsh, modified by Chang et al., by a fluorocarbon polymer as taught by Sasaki in order to improve corrosion resistance, heat resistance and water repellency.

5. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh in view of Chang et al., and further in view of Sasaki and Arya et al. (US PAT. 5,969,906).

Walsh, modified by Chang et al., teaches all of the limitations as set forth above except fluorocarbon polymer as the protective coating and placing the head element into a container and transporting the container. Sasaki discloses protective coating for an electrical device (semiconductor device) comprises a fluorocarbon polymer in order to improve corrosion resistance, heat resistance and water repellency (see abstract). Therefore, it would also have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a protective coating of Walsh, modified by Chang et al., by a fluorocarbon polymer as taught by Sasaki in order to improve corrosion resistance, heat resistance and water repellency.

Also, Arya et al. teach a process of automatic assembly system for a head element including processes of placing the head element (30) into a container (324) as shown in Fig. 6 and transporting the container as shown in Fig. 5 in order to provide very efficient automated process moving constantly the container from station to station. Therefore, it would also have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a reworking process of Walsh, modified

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by Chang et al., by placing the head element into a container and transporting the container as taught by Arya et al. in order to provide very efficient automated process moving constantly the container from station to station.

6. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh in view of Chang et al. with Sasaki and Arya et al., and further in view of Chen et al.

Walsh, modified by Chang et al., Sasaki and Arya et al., teaches all of the limitations except cleaning the head element prior to apply the non-permanent protective coating. Chen et al. teach processes of applying a protective coating to a slider (equivalent with the transducer head) to protect the slider and cleaning the head element prior to apply the protective coating in order to increase storage medium/transducer interface reliability (col. 5, lines 41-54). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of reworking a head element of Walsh, modified by Chang et al., Sasaki and Arya et al., by cleaning process as taught by Chen et al. in order to increase storage medium/transducer interface reliability.

***Allowable Subject Matter***

7. Newly submitted claim 65 is allowed.

8. Claims 9, 10, 12-28, 43-46, 49, 50, 52, 58-60 and 64 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Upon further consideration the prior art of record fails to disclose the claimed invention such as a process of storing the head element following applying the non-permanent protective coating (as per claim 9), post-processing the non-permanent protective coating to enhance the corrosion protection (as per claim 10), removing at least portion of the non-permanent protective coating after reworking the disk drive (as per claim 14), and mounting the head element to a shipping comb (as per claim 43).

### ***Response to Arguments***

10. Applicant's arguments with respect to claims 1-31, 43, 44 and 46-65 have been considered but are moot in view of the new ground of rejection. Rejections are based on the newly cited reference.

11. Applicant argues that the prior art of record fails to disclose the claimed invention such as applying a non-permanent protective coating to the head element. Examiner traverses the argument that Chang et al. teach a process of applying a temporary protective coating to a magnetic head to protect the head element from the wear and corrosion damages during the fabrication process and then removes the protecting coating. According to claimed invention such as claim 1, the non-permanent protective coating is applied to the head element. Therefore, the non-permanent protective coating applied to the head element is equivalent any protective coating to apply to the magnetic head. Therefore, it would be obvious to modify a process of reworking a head element of Walsh by applying a protective coating to the head element as taught by



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Chang et al. for protecting the head element from the damage during the reworking process.

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

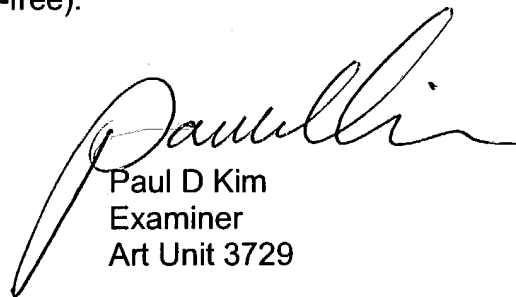
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D Kim whose telephone number is 571-272-4565. The examiner can normally be reached on Monday-Friday between 8:00 AM to 4:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul D Kim  
Examiner  
Art Unit 3729